

Claims

- [c1] 1. A portable welding apparatus comprising a metal enclosure and an end panel affixed to the metal enclosure forming an internal space for containing electrically conductive components, the end panel having an electrical terminal with an external receptacle for receiving an external cable and an internal electrical stud extending inwardly into the internal space, an electrical shield at least partially surrounding the internal stud to prevent arcing between said internal stud and an electrically conductive component or the metal enclosure.
- [c2] 2. The welding apparatus as defined in claim 1 wherein the electrical shield is comprised of a thin non-conductive material.
- [c3] 3. The welding apparatus as defined in claim 2 wherein the electrical shield is comprised of MYLAR plastic.
- [c4] 4. The welding apparatus as defined in claim 1 wherein the end panel is a molded plastic construction and the end panel has a plurality of molded ribs extending inwardly into the internal space and wherein the electrical shield is fitted into the molded ribs.
- [c5] 5. The welding apparatus as defined in claim 1 wherein the electrical shield has an external planar side having an upper edge and oriented in a vertical plane intermediate the internal electrical stud and the metal enclosure.
- [c6] 6. The welding apparatus as defined in claim 5 wherein the electrical shield has an upper planar side extending inwardly from the upper edge of the external planar side into the internal space to form an inner edge displaced inwardly of the internal stud and the upper planar side is oriented in a horizontal plane located above the internal electrical stud.
- [c7] 7. The welding apparatus as defined in claim 6 wherein the electrical shield has an internal planar side extending downwardly from the inner edge of the upper planar side and the inner planar side is oriented in a generally vertical plane and having a lower edge located below the internal electrical stud.
- [c8] 8. The welding apparatus as defined in claim 7 wherein the electrical shield has

a lower planar side extending inwardly toward the internal space from the lower edge of the internal planar side and the lower planar side has an inner edge displaced a predetermined distance inwardly therefrom.

[c9] 9. A shield for preventing arcing from a electrical stud of a portable welding apparatus, said shield comprising a generally inverted U-shaped configuration adapted to at least partially surround the electrical stud, said shield constructed of a non-conductive material, said inverted U-shaped shield having an first planar side having an upper edge, a second planar side extending inwardly from the upper edge of the first planar side and having an inner edge, said second planar side oriented in a plane generally perpendicular to the plane of the first planar side, a third planar side extending from the inner edge of the second planar side, said third planar side oriented in a plane generally parallel to the plane of the first planar side to form the inverted U-shape.

[c10] 10. The shield as defined in claim 9 where the non-conductive material is a plastic material and is preformed into the inverted U-shaped configuration.

[c11] 11. The shield as defined in claim 9 where the plastic material is MYLAR plastic and has a thickness of about 10-15 thousandths of an inch.

[c12] 12. A method of providing electrical shielding to prevent arcing in a portable welding apparatus, said method comprising the steps of:
providing a portable welding apparatus comprising a conductive enclosure having an end panel, the end panel having an external surface and an internal surface to form an enclosed space with the conductive enclosure to contain conductive components, the end panel having an electrical terminal having a receptacle on the external surface and an electrical stud on the internal surface, the internal surface having a plurality of ribs extending outwardly therefrom, providing a pre-configured electrical shield, and
affixing the electrical shield to the internal surface of the end panel to at least partially surround the electrical stud by fitting the electrical shield into the ribs to shield the electrical stud against arcing to the conductive components or the conductive enclosure.

- [c13] 13. The method of providing electrical shielding as defined in claim 12 wherein the step of providing a pre-configured electrical shield comprises providing a non-conductive electrical shield pre-configured in a generally U-shaped configuration.
- [c14] 14. The method of providing electrical shielding as defined in claim 12 wherein the step of providing a portable welding apparatus comprises providing a portable welding apparatus having a molded plastic end panel and the plurality of ribs extending outwardly from the internal surface are molded into the end panel.
- [c15] 15. A portable welding apparatus having a enclosure and at least one end panel joined to the enclosure to form an enclosed space for containing electrically conductive components, the end panel having a electrical stud affixed thereto and extending inwardly toward the enclosed space, a non-conductive shield comprising at least three planar sides, the non-conductive shield being affixed to the end panel to at least partially surrounding the electrical stud to prevent arcing between the electrical stud and an electrically conductive component.
- [c16] 16. The portable welding apparatus of claim 15 wherein the at least three planar sides form a generally U-shaped configuration.
- [c17] 17. The portable welding apparatus of claim 15 wherein the at least three planar sides are constructed of MYLAR plastic.
- [c18] 18. The portable welding apparatus of claim 15 wherein the end panel has a plurality of ribs extending outwardly proximate the electrical stud and the non-conductive shield is affixed to the end panel by being interfitted within the ribs.
- [c19] 19. The portable welding apparatus of claim 15 wherein one of the planar sides of the non-conductive shield is located intermediate the electrical stud and the enclosure.
- [c20] 20. The portable welding apparatus of claim 15 wherein the portable welding apparatus has a circuitboard located within the enclosure and at least one of the planar sides of the non-conductive shield is located between the electrical stud

and the circuitboard.